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## NOTICE OF ALLOWANCE AND FEE(S) DUE

47390

7590

07/07/2010

THOMAS, KAYDEN, HORSTEMEYER & RISLEY LLP  
600 GALLERIA PARKWAY, 15TH FLOOR  
ATLANTA, GA 30339

EXAMINER

DICKERSON, TIPHANY B

ART UNIT

PAPER NUMBER

3623

DATE MAILED: 07/07/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,222	03/26/2004	Jen-Lin Chao	252011-2070	1942

TITLE OF INVENTION: SYSTEM AND METHOD FOR BALANCING PRODUCTION CAPACITY

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	10/07/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

## HOW TO REPLY TO THIS NOTICE:

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If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# **PART B - FEE(S) TRANSMITTAL**

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**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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47390 7590 07/07/2010

**THOMAS, KAYDEN, HORSTEMEYER & RISLEY LLP**  
**600 GALLERIA PARKWAY, 15TH FLOOR**  
**ATLANTA, GA 30339**

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAME INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,222	03/26/2004	Jen-Lin Chao	252011-2070	1942

**TITLE OF INVENTION: SYSTEM AND METHOD FOR BALANCING PRODUCTION CAPACITY**

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	10/07/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
DICKERSON, TIPHANY B	3623	705-010000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_  
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_  
 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1351 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1351 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

**Notice of Allowability****Application No.**

10/811,222

**Applicant(s)**

CHAO ET AL.

**Examiner**

Tiphany B. Dickerson

**Art Unit**

3623

**- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 04/17/2010.
2. ☒ The allowed claim(s) is/are 7-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

/Tiphany B. Dickerson/  
Examiner, Art Unit 3623

/Beth V. Boswell/  
Supervisory Patent Examiner, Art Unit 3623

**DETAILED ACTION**

The following Office Action is in response to the correspondence filed on 17 April 2010. Claims 7 and 13 have been amended by examiner's amendments. Claims 1-6 were previously canceled. Currently, claims 7-18 are pending and have been allowed. This action includes an examiner's amendment and reasons for allowance.

***Examiner's Amendment***

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given by telephonic interview with Daniel McClure on July 1, 2010.

**In the claims:**

7. (Currently amended): A computer-implemented method for balancing production capacity between different production technologies for use in a computer, wherein the computer is programmed to perform the steps of:

receiving a first order;

additionally generating a dummy order corresponding to the first order, wherein the dummy order and the first order are simultaneously ~~existed~~ existing in the computer;

reserving a first capacity of a first production technology for the first order and reserving a second capacity of a second production technology for the dummy order, wherein the first production technology and the second production technology are different;

receiving a second order;

when ~~a~~ the second order requesting the first production technology is received canceling the first order and directing the dummy order to substitute the first order, such that the first order is fulfilled by the second capacity originally reserved for the dummy order; and

releasing the first capacity originally reserved for the first order to fulfill the second order.

13. (Currently amended): A machine-readable storage medium storing a computer program which when executed causes a computer to perform a method for balancing production capacity between different production technologies, the method comprising the steps of:

receiving a first order;

additionally generating a dummy order corresponding to the first order, wherein the dummy order and the first order are simultaneously ~~existed~~ existing in the computer;

reserving a first capacity of a first production technology for the first order and reserving a second capacity of a second production technology for the dummy order, wherein the first production technology and the second production technology are different;

receiving a second order;

canceling the first order and directing the dummy order to substitute the first order if a the second order requesting the first production technology is received, such that the first order is fulfilled by the second capacity originally reserved for the dummy order; and

releasing the first capacity originally reserved for the first order to fulfill the second order.

***Reasons for Allowance***

Claims 7-18 have been allowed. The following is an examiner's statement of reasons for allowance.

The claimed invention is allowable over the prior art on record, Wang et al. (U.S. Patent Publication 2005/0038684) in view of Medellin et al. (U.S. Patent Publication 2005/0216317) and further in view of Çatay, "Tool Capacity Planning in Semiconductor Manufacturing," (August 2003), Computer & Operation Research, Vol. 30, No. 9, pp., 1349-1366 in view of the arguments presented by the Applicant in the Remarks dated April 17, 2010.

Wang teaches a system and method of demand and capacity planning which like the instant application includes an order management, capacity management, and a production line. However, Wang fails to disclose reserving a first capacity of a first production technology for the first order and reserving a second capacity of a second production technology for the dummy order, wherein the first production technology and the second production technology are different and when a second order requesting the first production technology is received canceling the first order and directing the dummy order to substitute the first order, such that the first order is fulfilled by the second capacity originally reserved for the dummy order. Also, Wang et al. was disqualified as prior art under 103(c) since the reference and the instant application were commonly assigned to Taiwan Semiconductor Manufacturing Company, Ltd, at the time of filing the instant application.

Medellin teaches a capacity management system in an airline transportation context. Medellin discloses using a placeholder to reserve capacity for a booked time window (i.e., an



order), but the reference fails to teach reserving a first capacity for the first order and a second capacity for the placeholder. Medellin generally discloses moving the placeholder from one flight to another as reservations are canceled but fails to disclose the more specific concept of substituting the first order by fulfilling the first order using the second capacity originally reserved for the dummy order. Medellin fails to disclose reserving a first capacity of a first production technology for the first order and reserving a second capacity of a second production technology for the dummy order, wherein the first production technology and the second production technology are different and when a second order requesting the first production technology is received canceling the first order and directing the dummy order to substitute the first order, such that the first order is fulfilled by the second capacity originally reserved for the dummy order.

Finally Çatay discloses the concept of planning for the capacities many types of machines including newer and older production models over multiple time periods. Specifically, Çatay discusses the considerations involved in tool capacity planning when there are varying manufacturing characteristics. However the reference fails to disclose reserving a first capacity of a first production technology for the first order and reserving a second capacity of a second production technology for the dummy order, wherein the first production technology and the second production technology are different and when a second order requesting the first production technology is received canceling the first order and directing the dummy order to substitute the first order, such that the first order is fulfilled by the second capacity originally reserved for the dummy order.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Çakanyildirim, M. and Roundy, R. "Evaluation of Capacity Planning Practices for the Semiconductor Industry" August 2002, IEEE Transactions on Semiconductor Manufacturing, Vol. 15, No. 3, pp. 331-340, disclosing a survey of capacity planning approaches including tool capacity planning heuristics.
- Çatay, "Tool Capacity Planning in Semiconductor Manufacturing," August 2003, Computers & Operations Research, Vol. 30, No. 9, pp. 1349-1366, disclosing methods of aggregate level capacity planning and strategic level investment decisions in procuring new equipment.
- Allen, Jr. et al., (U.S. Patent 6,763,277), disclosing a method and apparatus for proactive dispatch system to improve line balancing using a simulation-based scheduling environment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiphany B. Dickerson whose telephone number is (571)270-7048. The examiner can normally be reached on M-F 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571)272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tiphany B. Dickerson/  
Examiner, Art Unit 3623

/Beth V. Boswell/  
Supervisory Patent Examiner, Art Unit 3623